

What is claimed is:

1. An image forming apparatus for forming an image on a photoconductive element with image forming means, comprising:

an apparatus body;

a plurality of image forming cartridges removably mounted to said apparatus body in a form of a stack; and

a structural member for partitioning off a space between nearby ones of said plurality of image forming cartridges mounted to said apparatus body;

wherein a plurality of photoconductive elements each are supported by a respective one of said plurality of image forming cartridges beforehand, or said plurality of photoconductive elements are supported by said apparatus body beforehand such that when said plurality of image forming cartridges are mounted to said apparatus body, said image forming means supported by said image forming cartridges beforehand each partly contact an associated one of said plurality of photoconductive elements.

2. An apparatus as claimed in claim 1, wherein said structural member includes a guide extending in a direction in which said image forming cartridges are mounted and dismounted, said guide being engageable with a preselected portion of an associated one of said image forming cartridges for guiding the image forming cartridge.

3. An apparatus as claimed in claim 1, wherein said structural member includes pressing means for exerting a resilient pressing force between the nearby image forming cartridges and said structural

member.

4. An apparatus as claimed in claim 1, wherein said structural member includes vibration proofing means for exerting a viscoelastic pressing force between the nearby image forming cartridges and said structural member.

5. An apparatus as claimed in claim 1, further comprising a flat second structural member positioned in a space at one side of said image forming cartridges opposite to a side where image forming sections including said photoconductive elements are located, wherein said second structural member is parallel to a stacking direction of said image forming cartridges and connected to said structural member assigned to said image forming cartridges.

6. An apparatus as claimed in claim 1, wherein said image forming means each comprise at least one of a charge roller, a developing means, and a cleaning blade.

7. An apparatus as claimed in claim 6, wherein said developing means each comprise a developing roller contacting an associated one of said photoconductive elements and a spacing member for locating said developing roller and the photoconductive element at a preselected distance.

8. An apparatus as claimed in claim 1, further comprising: a plurality of said structural members each for partitioning off the space between the nearby ones of said image forming cartridges, and each being affixed to said apparatus body at a part thereof; a plurality of structural members each for partitioning a

space between nearby ones of a plurality of optical writing means stacked one above the other, and each being affixed to said apparatus body at a part thereof; and

a shared structural member positioned in a space at one side of said image forming cartridges opposite to a side where said plurality of optical writing means are located, wherein said shared structural member is parallel to a stacking direction of said image forming cartridges and affixed to said apparatus body at a part thereof and connected to said plurality of structural members assigned to said plurality of image forming cartridges and said plurality of structural members assigned to said plurality of optical writing means.

9. An apparatus as claimed in claim 1, wherein said image forming means each are partly received in a casing separate from the respective image forming cartridge and constituting said structural member assigned to said image forming cartridges.

10. An apparatus as claimed in claim 9, wherein said image forming means comprise developing means.

11. An apparatus as claimed in claim 1, wherein said apparatus body comprises a box-like frame including a wall present on imaginary extensions of axes of said photoconductive elements, wherein said wall is formed with an opening dimensioned to allow said image forming cartridges to be mounted and dismounted in an axial direction of said photoconductive elements, and wherein said structural members and said frame are affixed to each other such that said structural members

traverse said opening at one end thereof.

12. An apparatus as claimed in claim 1, wherein said apparatus body comprises a box-like frame including a wall perpendicular to an axial direction of said photoconductive elements in a horizontal plane, said wall being openable to allow said image forming cartridges to be mounted and dismounted.

13. An image forming apparatus comprising:

an apparatus body;

a plurality of optical writing means stacked one above the other and each being mounted on a respective base member supported by said apparatus body;

adjusting means included in at least one of said plurality of optical writing means for correcting a shift of a scanning line relative to scanning lines of the other optical writing means; and

a structural member partitioning off a space between the optical writing means including said adjusting means and the optical writing means adjoining said optical writing means, said structural member being affixed to said apparatus body at a part thereof.

14. An apparatus as claimed in claim 13, further comprising pressing means for exerting a resilient pressing force between said optical writing means including said adjusting means and said structural member assigned to said optical writing means.

15. An apparatus as claimed in claim 13, further comprising vibration proofing means for exerting a viscoelastic pressing force between said optical writing means including said adjusting means and

said structural member assigned to said optical writing means.

16. An apparatus as claimed in claim 13, wherein said structural member assigned to said optical writing means is affixed to a structural member affixed to said apparatus body in parallel to a stacking direction of said optical writing means.

17. An apparatus as claimed in claim 13, further comprising:

a plurality of said structural members each for partitioning off the space between the nearby ones of said image forming cartridges, and each being affixed to said apparatus body at a part thereof;

a plurality of structural members each for partitioning a space between nearby ones of a plurality of optical writing means stacked one above the other, and each being affixed to said apparatus body at a part thereof; and

a shared structural member positioned in a space at one side of said image forming cartridges opposite to a side where said plurality of optical writing means are located, wherein said shared structural member is parallel to a stacking direction of said image forming cartridges and affixed to said apparatus body at a part thereof and connected to said plurality of structural members assigned to said plurality of image forming cartridges and said plurality of structural members assigned to said plurality of optical writing means.

18. An apparatus as claimed in claim 17, wherein said apparatus body comprises a box-like frame including a wall present on imaginary extensions of axes of said photoconductive elements, wherein said

wall is formed with an opening dimensioned to allow said image forming cartridges to be mounted and dismounted in an axial direction of said photoconductive elements, and wherein said structural members and said frame are affixed to each other such that said structural members traverse said opening at one end thereof.

19. An apparatus as claimed in claim 17, wherein said apparatus body comprises a box-like frame including a wall perpendicular to an axial direction of said photoconductive elements in a horizontal plane, said wall being openable to allow said image forming cartridges to be mounted and dismounted.

20. An apparatus as claimed in claim 17, wherein said shared structural member is formed with slots each matching in size with a diameter and a scanning width of a light beam to issue from the respective optical writing means.

21. An apparatus as claimed in claim 13, wherein said adjusting means is arranged in a housing of said optical writing means, said housing constituting said structural member assigned to said optical writing means.

22. An apparatus as claimed in claim 21, wherein said adjusting means comprises holding means for causing a mirror for reflecting a light beam for scanning to rotate about any suitable point in a scanning direction and holding said mirror in a rotated position.

23. An image forming apparatus comprising:  
an apparatus body;  
a plurality of photoconductive elements mounted on said

apparatus body one above the other; and

a plurality of optical writing means each for forming a latent image on a respective one of said plurality of photoconductive elements;

wherein said plurality of optical writing means are constructed into a single box-like writing unit for emitting a plurality of light beams toward said plurality of photoconductive elements, said writing unit being spaced from said plurality of photoconductive elements by a preselected distance.

24. An apparatus as claimed in claim 23, wherein said writing unit comprises at least a polygonal mirror and a mirror for reflection, said polygonal mirror steering the light beams in said writing unit in a stacking direction of photoconductive elements.

25. An apparatus as claimed in claim 24, wherein said writing unit is mounted on a flat structural member parallel to the stacking direction of said photoconductive element, said structural member being affixed to said apparatus body at a part thereof to thereby maintain said distance.

26. An apparatus as claimed in claim 25, wherein said writing unit is retained by said structural member via resilient members at both ends thereof in the stacking direction of said photoconductive, said writing unit being provided with a margin with respect to a movement in said stacking direction at portions thereof retained by said structural member.

27. An apparatus as claimed in claim 26, wherein said writing

unit is supported by said structural member at an intermediate point in said stacking direction.

28. An apparatus as claimed in claim 25, wherein a plurality of image forming cartridges each including one of said photoconductive elements are mounted on said apparatus body, a plurality of structural members each partitioning off a space between nearby ones of said plurality of image forming cartridges and connected to said structural member assigned to said writing unit.

29. An apparatus as claimed in claim 25, wherein a plurality of image forming cartridges are mounted to said apparatus body such that a part of image forming means included in each of said plurality of image forming cartridges contacts a respective one of said photoconductive elements, said structural members assigned to said image forming cartridges each partitioning off a space between nearby ones of said plurality of image forming cartridges and connected to said structural member assigned to said writing unit.

30. An apparatus as claimed in claim 29, wherein said structural members assigned to said image forming cartridges each include a guide engageable with a preselected portion of the respective image forming cartridge for guiding said respective image forming cartridge.

31. An apparatus as claimed in claim 29, wherein said structural members assigned to said image forming cartridges each include pressing means for exerting a resilient force between the nearby image forming cartridges and the structural member.

32. An apparatus as claimed in claim 29, wherein said structural members assigned to said image forming cartridges each include vibration proofing means for exerting a viscoelastic pressing force between the nearby image forming cartridges and the structural member.

33. An image forming apparatus for forming an image on a photoconductive element with image forming means, comprising:

an apparatus body;

a plurality of image forming cartridges removably mounted to said apparatus body in a form of a stack; and

a plurality of optical writing means each for forming a latent image on a photoconductive element associated therewith;

wherein a plurality of photoconductive elements each are supported by a respective one of said plurality of image forming cartridges beforehand, or said plurality of photoconductive elements are supported by said apparatus body beforehand such that when said plurality of image forming cartridges are mounted to said apparatus body, said image forming means supported by said image forming cartridges beforehand each partly contact an associated one of said plurality of photoconductive elements; and

wherein said plurality of optical writing means are constructed into a single box-like writing unit for emitting a plurality of light beams toward said plurality of photoconductive elements in a stacking direction of said plurality of image forming cartridges, said writing unit being spaced from said plurality of

photoconductive elements by a preselected distance.

34. An apparatus as claimed in claim 33, wherein said writing unit comprises at least a polygonal mirror and a mirror for reflection, said polygonal mirror steering the light beams in said writing unit in a stacking direction of photoconductive elements.

35. An apparatus as claimed in claim 34, wherein said writing unit is mounted on a flat structural member parallel to the stacking direction of said photoconductive element, said structural member being affixed to said apparatus body at a part thereof to thereby maintain said distance.

36. An apparatus as claimed in claim 35, wherein said writing unit is retained by said structural member via resilient members at both ends thereof in the stacking direction of said photoconductive, said writing unit being provided with a margin with respect to a movement in said stacking direction at portions thereof retained by said structural member.

37. An apparatus as claimed in claim 36, wherein said writing unit is supported by said structural member at an intermediate point in said stacking direction.

38. An apparatus as claimed in claim 35, wherein a plurality of image forming cartridges each including one of said photoconductive elements are mounted on said apparatus body, a plurality of structural members each partitioning off a space between nearby ones of said plurality of image forming cartridges and connected to said structural member assigned to said writing unit.

39. An apparatus as claimed in claim 35, wherein a plurality of image forming cartridges are mounted to said apparatus body such that a part of image forming means included in each of said plurality of image forming cartridges contacts a respective one of said photoconductive elements, said structural members assigned to said image forming cartridges each partitioning off a space between nearby ones of said plurality of image forming cartridges and connected to said structural member assigned to said writing unit.

40. An apparatus as claimed in claim 39, wherein said structural members assigned to said image forming cartridges each include a guide engageable with a preselected portion of the respective image forming cartridge for guiding said respective image forming cartridge.

41. An apparatus as claimed in claim 39, wherein said structural members assigned to said image forming cartridges each include pressing means for exerting a resilient force between the nearby image forming cartridges and the structural member.

42. An apparatus as claimed in claim 39, wherein said structural members assigned to said image forming cartridges each include vibration proofing means for exerting a viscoelastic pressing force between the nearby image forming cartridges and the structural member.